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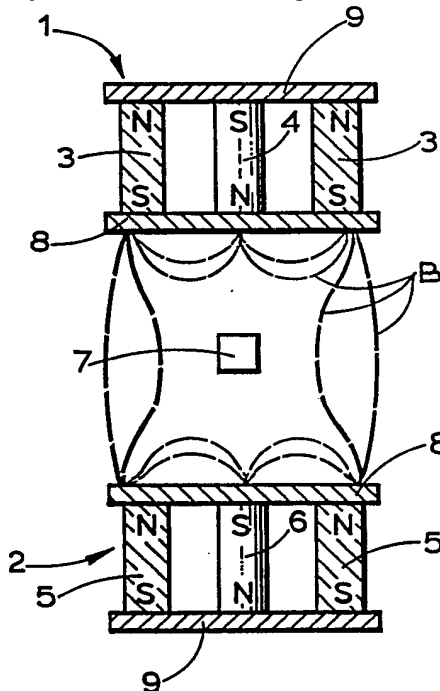
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(54) **Magnetron sputter ion plating**

(57) A magnetron sputter ion plating system has two or more magnetron assemblies (1, 2; 10, 11, 12; 30-33) spaced around a substrate (7; 7') centrally located relative to the magnetrons. The magnetrons are arranged so that adjacent magnetrons have outer magnetic assemblies of opposite polarity, so that magnetic field lines link adjacent magnetrons, so as to produce a substantially closed ring of magnetic flux. This substantially traps all electrons generated in the system, and increase the level of ionisation surrounding the substrates increasing the ion bombardment of the substrates. Several embodiments are disclosed.



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ABSTRACT:

CHG DATE=19990617 STATUS=O> A magnetron sputter ion plating system has two or more magnetron

assemblies (1, 2; 10, 11, 12; 30-33) spaced around a substrate (7; 7') centrally located relative to the magnetrons. The magnetrons are arranged so that adjacent magnetrons have outer magnetic assemblies of opposite polarity, so that magnetic field lines link adjacent magnetrons, so as to produce a substantially closed ring of magnetic flux. This substantially traps all electrons generated in the system, and increase the level of ionisation surrounding the substrates increasing the ion bombardment of the substrates. Several embodiments are disclosed. □